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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,075

06/21/2007

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056226.57663US

1578

23911 7590 12/27/2010
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EXAMINER

WALCK, BRIAN D

ART UNIT

PAPER NUMBER

1736

MAIL DATE

DELIVERY MODE

12/27/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,075	Applicant(s) KOCH ET AL.	
	Examiner Brian Walck	Art Unit 1736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17,20-23,26-29 and 31-43 is/are pending in the application.
- 4a) Of the above claim(s) 40-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17,20-23,26-29 and 31-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/14/2010 has been entered.

Status of Claims

2. Claims 1-16, 18-19, 24, 25, and 30 are canceled. Claims 17, 20-23, 26-29, 31-43 are pending where claim 17 has been amended. Claims 40-43 are withdrawn from consideration and claims 17 and 20-39 remain for examination on the merits.

Status of Previous Rejections

3. The previous 35 USC § 103 rejections of the claims have been withdrawn in view of amendments to the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 17, 20-23, 26-29, 31-33, 35-37, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1138794 A1 to Spanjers et al (cited in previous office action) in view of US 5,620,652 to Tack et al and the evidentiary reference of the article titled "Aluminum Alloys" by Lyle et al from Ullmann's Encyclopedia of Industrial Chemistry (cited in previous office action).

Regarding claim 17, Spanjers discloses a cast aluminum alloy comprising the following composition (Spanjers, abstract), which partially overlaps the instantly claimed composition:

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Element	Claimed wt%	Spanjers wt%	Overlap
Mg	3-6	2.7-6.0	3-6.0
Si	>1-4	0-1.4	1-1.4
Sc	0.01-<0.5	0-0.3	0.01-0.3
Ti	0.05-0.15	0-0.2	0.05-0.15
Gd	≥0.001	~0	Indeterminate
Zn	0-0.05	0.10-1.5	Close at ~0.05-0.1
Zr	0-0.5	0-0.3	0-0.3
Mn	0-0.8	0.4-1.4	0.4-0.8
Cr	0-0.3	~0	~0
Cu	0-1.0	~0	~0
Fe	0-0.6	0-1	0-0.6
Be	0-0.004	~0	~0
Al	Balance	Balance	Balance

Spanjers does not explicitly disclose that the alloy contains at least 0.001 wt% Gd.

Tack discloses that the addition of 0.05 to 2.0 wt% Gd provides a positive effect on the Al_3Sc phase in aluminum alloys (Tack, column 14, lines 25-40).

Regarding claim 17, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add 0.05 to 2.0 wt% Gd (lying within the instantly claimed range of at least 0.001 wt%) as taught by Tack to the aluminum alloy of

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Spanjers. The motivation for doing so is that Tack discloses that the addition of 0.05 to 2.0 wt% Gd provides a positive effect on the Al_3Sc phase in aluminum alloys (Tack, column 14, lines 25-40).

In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists (see MPEP 2144.05 [R-5]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected values for the composition of each element that lie within the instantly claimed ranges because Spanjers in view of Tack discloses the same utility throughout the disclosed ranges.

Regarding the Zn concentration of instant claims 17 and 35, although the Zn concentrations of Spanjers in view of Tack does not overlap with the instantly claimed composition, a prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties (See MPEP 2144.05 [R-5]). In the instant case, a Zn content of 0.1 is close enough to a Zn content of 0.05 that one of ordinary skill in the art would expect otherwise identical alloys to have the same properties.

Regarding claims 20-23, 26-29, 33, 36-37, and 39, the alloy of Spanjers in view of Tack overlaps the additional compositional limitations of instant claims 20-29, 33, 36-37, and 39.

Regarding claims 31-32, Spanjers in view of Tack does not explicitly disclose the concentration of Cr in the alloy. However, Spanjers discloses that the alloy contains

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inevitable impurities (Spanjers, abstract). Lyle discloses that commonly produced aluminum alloys contain Cr as an impurity in an amount between 0.005-0.020 (Lyle, page 12, "3.1.1. Impurities in the Molten Metal"), which lies within the instantly claimed Cr content ranges of 0.001-0.3 or 0.0015-0.2. Therefore, the claimed Cr content would have been expected in the alloy of Spanjers in view of Tack as evidenced by Lyle.

8. Claims 17, 20-23, 26-29, 31-34, and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,619,181 to Willey (cited in previous office action) in view of US 5,620,652 to Tack et al.

Regarding claim 17, Willey discloses a cast aluminum alloy comprising the following composition (Willey, column 1 line 20- column 2 line 23), which overlaps the instantly claimed composition:

Element	Claimed wt%	Willey wt%	Overlap
Mg	3-6	0.5-10	3-6
Si	>1-4	0.3-1.5	>1-4
Sc	0.01-<0.5	0.2-0.6	0.2-<0.5
Ti	0.05-0.15	0.01-0.15	0.05-0.15
Gd	≥0.001	~0	Indeterminate
Zn	0-0.05	~0 or 0.5-10	~0
Zr	0-0.5	0.05-0.25	0.05-0.25
Mn	0-0.8	~0 or 0.15-2.0	0 or 0.15-0.8
Cr	0-0.3	0.05-0.4	0.05-0.3
Cu	0-1.0	0 or 0.5-10	~0 or 0.5-1.0

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Fe	0-0.6	0.3-2.0	0.3-0.6
Be	0-0.004	~0	~0
Al	Balance	Balance	Balance

Willey does not explicitly disclose that the alloy contains at least 0.001 wt% Gd.

Tack discloses that the addition of 0.05 to 2.0 wt% Gd provides a positive effect on the Al_3Sc phase in aluminum alloys (Tack, column 14, lines 25-40).

Regarding claim 17, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add 0.05 to 2.0 wt% Gd (lying within the instantly claimed range of at least 0.001 wt%) as taught by Tack to the aluminum alloy of Willey. The motivation for doing so is that Tack discloses that the addition of 0.05 to 2.0 wt% Gd provides a positive effect on the Al_3Sc phase in aluminum alloys (Tack, column 14, lines 25-40).

In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists (see MPEP 2144.05 [R-5]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected values for the composition of each element that lie within the instantly claimed ranges because Willey discloses the same utility throughout the disclosed ranges.

Regarding claims 20-23, 26, 27, 31-34, 36-39, the alloy of Willey overlaps the additional compositional limitations of instant claims 20-27, 31-34, 36-39.

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Regarding claims 28-29, Willey discloses that the alloy can contain 0.05-0.25 wt% vanadium (Willey, column 1 line 20- column 2 line 23), overlapping the instantly claimed vanadium content ranges.

Response to Arguments

9. Applicant's arguments with respect to claims 17, 20-23, 26-29 and 31-39 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Walck whose telephone number is (571)270-5905. The examiner can normally be reached on Monday-Friday 9 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571)272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian Walck/
Examiner, Art Unit 1736

/Stanley Silverman/
Supervisory Patent Examiner, Art Unit 1736